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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/729,553	12/05/2003	Scott D. Allen	FIS920020093US2	4323

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EXAMINER

FIORITO, JAMES

ART UNIT PAPER NUMBER

1763

DATE MAILED: 01/26/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/729,553

Applicant(s)

ALLEN ET AL.

Examiner

James A. Fiorito

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 05 December 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) 8-18 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-7 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 05 December 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 12-5-2003.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

Applicant's election of Species 1 Claims 1-7 in the reply filed on 11-15-2005 and telephone conversation with H. Daniel Schnurmann on 1-12-2006 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).

Claims 9-11, and 18 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected Species, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on 11-15-2005.

Specification

The disclosure is objected to because of the following informalities: In the brief description of the drawings Paragraphs 19 and 20 both refer to Fig. 4a.

Appropriate correction is required.

Drawings

Figures 1 and 2 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled

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"Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 102

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-4, and 6 are rejected under 35 U.S.C. 102(b) as being anticipated by Imafuku (US 6,074,518).

With respect to Claim 1: Imafuku discloses an apparatus for plasma processing of a wafer (Fig. 12), the wafer being disposed on a wafer holder during processing (Fig 12 Item 5, Column 12 Lines 27-39), the apparatus comprising: an annular structure (Fig 12 Item 73, Column 12 Lines 27-39) including a magnet (Fig 12 Item 74, Column 12 Lines 27-39), the structure concentric with the wafer holder (Fig 12 Item 73, Column 12 Lines 27-39), the magnet generating a magnetic field for deflecting charged particles incident on the structure, thereby preventing damage to the structure by said particles (Column 12 Lines 40-47).

With respect to Claim 2: Imafuku discloses the magnet comprises a magnetic material embedded in said structure (Fig 12 Item 74, Column 12 Lines 27-39).

With respect to Claim 3: Imafuku discloses the structure is characterized as a ring (Fig 12 Item 73, Column 12 Lines 27-39), the ring having a groove formed therein, and the magnet is disposed in the groove (Fig 12 Item 74, Column 12 Lines 27-39).

With respect to Claim 4: Imafuku discloses the magnet is a permanent magnet (Fig 12 Item 74, Column 12 Lines 27-39).

With respect to Claim 6: Imafuku discloses that the said structure is capable of being a material susceptible to erosion during the plasma processing, so that the magnetic field reduces said erosion (Column 12 Lines 27-47).

Claims 1-7 are rejected under 35 U.S.C. 102(b) as being anticipated by Seta (JP 2000-036486).

With respect to Claim 1: Seta discloses an apparatus for plasma processing of a wafer (Drawing 1), the wafer being disposed on a wafer holder during processing (Drawing 1 Item 3, Paragraph 21-22), the apparatus comprising: an annular structure (Drawing 1 Item 21, Paragraph 21-22) including a magnet (Drawing 1 Item 21, Paragraph 21-22), the structure concentric with the wafer holder (Drawing 1 Item 3, Paragraph 21-22), the magnet generating a magnetic field for deflecting charged particles incident on the structure, thereby preventing damage to the structure by said

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particles (Paragraph 21-22).

With respect to Claim 2: Seta discloses the magnet comprises a magnetic material embedded in said structure (Drawing 1 Item 21, Paragraph 21-22).

With respect to Claim 3: Seta discloses the structure is characterized as a ring (Drawing 1 Item 21, Paragraph 21-22), the ring having a groove formed therein (Drawing 1 Item 2, Paragraph 21-22), and the magnet is disposed in the groove (Drawing 1 Item 21, Paragraph 21-22).

With respect to Claim 4: Seta discloses the magnet is a permanent magnet (Drawing 6 Item 91, Paragraph 27).

With respect to Claim 5: Seta discloses that the magnet is an electromagnet (Drawing 1 Item 21, Paragraph 21-22).

With respect to Claim 6: Seta discloses that the said structure is capable of being a material susceptible to erosion during the plasma processing, so that the magnetic field reduces said erosion (Paragraph 21-22).

With respect to Claim 7: Seta discloses that the structure consists of the material quartz (Drawing 1 Item 2, Paragraph 21).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 5 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Imafuku (US 6,074,518) in view of Seta (JP 2000-036486).

With respect to Claim 5: Imafuku discloses an apparatus in accordance with Claim 1.

Imafuku does not expressly state that the magnet is an electromagnet.

Seta discloses an apparatus in accordance with claim 1, wherein the magnet is an electromagnet. Imafuku and Seta are analogous art because they are from the same field of endeavor, namely magnetic rings used in plasma processing.

At the time of invention, it would have been obvious to a person of ordinary skill in the art to form the magnetic ring of Imafuku including the magnet is an electromagnet in view of the teaching of Seta. The suggestion or motivation would have been to provide a means of controlling the magnetic field generated by the magnet (Drawing 2 Item 21, Paragraph 21).

With respect to Claim 7: Imafuku discloses an apparatus in accordance with Claim 1.

Imafuku does not expressly state that the structure is of a material selected from the group consisting of quartz, silicon, Y_2O_3 , silicon carbide and Al_2O_3 .

Seta discloses an apparatus in accordance with claim 1, wherein the structure is of a material selected from quartz (Paragraph 21).

At the time of invention, it would have been obvious to a person of ordinary skill in the art to form the magnetic ring of Imafuku including the structure is of a material selected from quartz in view of the teaching of Seta. The suggestion or motivation would have been to provide a material to the structure that is resistant to corrosion. As required by Imafuku but not disclosed.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Obinata (US 4,624,767) teaches that an annular magnetic field can be generated surrounding the space confining the plasma to further concentrate it.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to James A. Fiorito whose telephone number is (571)272-7426. The examiner can normally be reached on Standard.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Parviz Hassanzadeh can be reached on (571) 272-1435. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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